

Safety data sheet

DMEM low-glucose

BB-SDS-DMEM-LOW-GLUCOSE-1X-NAHCO3
Revision 2026-09-20.7 · 2026-09-20

1. Identification

Item	Information
Product	DMEM low-glucose, 1X, with sodium bicarbonate and sodium pyruvate
Product identifier	MD-LIQ-DMEM-LOW-GLUCOSE-1X-NAHCO3
Use	Laboratory cell-culture reagent
Restrictions	Not for diagnostic use or administration to people or animals
Responsible party	Bramante Biologics Corporation
Address	160 Alewife Brook Parkway, STE 1316, Cambridge, MA 02138, USA
Telephone	+1 (617) 221-6167
Emergency telephone	+1 (617) 221-6167
Email	support@bramantebio.com

Use the listed number for product or chemical-emergency information. For an urgent medical emergency, contact emergency services.

2. Hazard Identification

This aqueous medium is not classified as hazardous under the US OSHA Hazard Communication Standard, 29 CFR 1910.1200, on the basis of its nominal composition and available ingredient information.

Label item	Determination
Signal word	None required
Hazard pictograms	None required
Hazard statements	None required
Precautionary statements	No classification-based statements required; laboratory handling advice is provided in this SDS
Other hazards	No additional classified hazard identified for the supplied liquid

Avoid eye splashes and breathing generated mist. Spilled liquid can make surfaces slippery. No ingredient with unknown acute toxicity is present at or above 1% in the nominal formulation; an unknown-acute-toxicity percentage statement is therefore not required.

3. Composition/information on ingredients

Aqueous mixture containing salts, amino acids, vitamins, glucose and sodium pyruvate. No ingredient meets the applicable concentration criteria for mandatory hazardous-ingredient disclosure in this mixture. Selected nominal additions are provided for chemical identification; water is added to final volume.

Ingredient and form	CAS	Nominal addition
Sodium chloride	7647-14-5	6.4 g/L

Ingredient and form	CAS	Nominal addition
Sodium bicarbonate	144-55-8	3.7 g/L
D-Glucose, anhydrous	50-99-7	1 g/L
Potassium chloride	7447-40-7	400 mg/L
Calcium chloride dihydrate	10035-04-8	264.9 mg/L
Magnesium sulfate heptahydrate	10034-99-8	200 mg/L
Sodium phosphate monobasic, anhydrous	7558-80-7	108.7 mg/L
Sodium pyruvate	113-24-6	110 mg/L
Iron(III) nitrate nonahydrate	7782-61-8	100 µg/L

The product sheet gives the complete nominal formulation. These mass-per-volume additions are not weight percentages or lot assay results. No composition is withheld as a trade secret.

4. First aid measures

Exposure	Response
Eyes	Begin rinsing with clean running water. Remove contact lenses when readily possible, then continue rinsing. Obtain medical advice if pain, redness or visual disturbance continues.
Skin	Remove wet clothing and wash exposed skin with water. Seek advice for persistent irritation.
Inhalation of mist	Leave the exposure area for fresh air. Breathing difficulty requires urgent medical attention.
Swallowing	Rinse the mouth. Do not provoke vomiting. Seek medical advice after a significant ingestion or if symptoms develop; give nothing by mouth to an unconscious person.

Contact may cause local discomfort; mixture-specific acute or delayed symptom data have not been established. No specific antidote is identified. Provide the product identity and exposure details to the treating clinician.

5. Fire-fighting measures

The supplied water-based liquid is not expected to sustain combustion. Choose an extinguishing agent for the materials burning nearby. No mixture-specific unsuitable agent has been identified.

Heating a closed bottle can raise internal pressure. When water evaporates, the remaining salts and organic ingredients may decompose; heated residue may release carbon or nitrogen oxides and irritating fumes. The trace nitrate addition does not establish an oxidizing-liquid classification.

Firefighters should use protective clothing and independent breathing air appropriate to the fire. Cool exposed containers from a protected position when safe to do so.

6. Accidental release measures

Restrict access to the wet area, which may be slippery. Use gloves and eye protection, stop the leak if safe, and absorb the liquid with suitable disposable material. Transfer waste to a labeled container and wash residual material from the surface after collection.

Keep bulk spills out of drains. If the medium has contacted cultures or other reagents, select cleanup and waste procedures for those additional hazards. Avoid spraying or otherwise dispersing contaminated liquid.

7. Handling and storage

Use closed containers and pipetting practices that limit splashes. Do not mouth-pipette. Wash hands after handling, and keep food and drink outside the work area.

Store at 2–8 °C, protected from light, in the labeled closed bottle. Avoid freezing and prolonged warming. Keep separate from strong oxidizers and concentrated acids or bases. Addition of acid to bicarbonate can generate carbon dioxide and pressure in a closed vessel.

8. Exposure controls/personal protection

Exposure limit	Information
Soluble iron salts, as Fe	NIOSH REL: 1 mg/m³ TWA; published ACGIH TLV: 1 mg/m³ TWA. These are airborne limits.
OSHA PEL for soluble iron salts	No current substance-specific PEL; the former 1 mg/m³ value was vacated
Other nominal ingredients	No additional substance-specific occupational exposure limit identified in the reviewed ingredient information

General laboratory ventilation is suitable for ordinary bottle transfer. Enclose or locally exhaust equipment that produces mist. The airborne iron limit is not a concentration limit for the liquid. Keep an eyewash facility accessible.

Wear a laboratory coat, gloves suitable for the task and eye protection against splashes. Change contaminated gloves. Respiratory protection is not normally needed for small-volume liquid handling; mist-producing work requires an exposure assessment and controls appropriate to that operation.

9. Physical and chemical properties

Property	Information for supplied mixture
Physical state	Liquid
Color	Colorless to pale yellow (expected)
Odor	No strong odor expected from the composition
Odor threshold	Not available
Melting/freezing point	Slightly below 0 °C (aqueous-solution estimate)
Initial boiling point/range	About 100 °C at 101.3 kPa (water-based estimate)
Flammability	Nonflammable aqueous solution
Lower/upper flammable limits	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not applicable to the supplied aqueous solution
Decomposition temperature	Not available
pH	Nominal target 7.0–7.4 at 20–25 °C under defined ambient-air exposure
Kinematic viscosity	Approximately 1 mm ² /s at 20 °C (dilute-solution estimate)
Solubility	Miscible with water
Partition coefficient, n-octanol/water	Not determined for this multicomponent mixture
Vapor pressure	Water-vapor contribution: approximately 2.3 kPa at 20 °C (estimate)
Evaporation rate	Not available
Density/relative density	Approximately 1 g/mL; relative density approximately 1 at 20 °C (estimates)
Relative vapor density	Water vapor: approximately 0.62, air = 1 (estimate)
Particle characteristics	Not applicable; liquid solution

Bicarbonate can release carbon dioxide during warming or changes in gas conditions; water-vapor estimates do not describe the total headspace gas pressure or density.

10. Stability and reactivity

Stable under the recommended refrigerated, light-protected storage conditions. No hazardous polymerization is expected. Prolonged warming, contamination or gas exchange can alter medium quality; freezing can produce precipitates.

Strong oxidizers can react with the organic ingredients. Concentrated acid releases carbon dioxide from bicarbonate; concentrated base changes pH and may form precipitates. Avoid heating a tightly closed container. No other specific hazardous reaction has been established for the supplied mixture.

No hazardous decomposition is expected during ordinary refrigerated storage. Strong heating of dried residue can produce irritating fumes and carbon or nitrogen oxides.

11. Toxicological information

Eye and skin contact, accidental ingestion and inhalation of generated mist are possible exposure routes. Transient eye or skin discomfort, respiratory irritation from mist, or gastrointestinal discomfort after ingestion may occur. Significant acute or chronic toxicity is not expected from normal laboratory handling of the supplied solution.

Endpoint	Assessment
Acute oral, dermal and inhalation toxicity	Not classified at the nominal ingredient concentrations. No finished-mixture LD50 or LC50 has been measured.
Skin corrosion and irritation	Not classified; the buffered nominal pH is near neutral and relevant ingredients are below concentration-based classification levels.
Serious eye damage and eye irritation	Not classified. The dilute ingredient concentrations do not reach the applicable mixture criteria.
Respiratory or skin sensitization	Not classified from the available ingredient evidence and concentrations.
Germ-cell mutagenicity and reproductive toxicity	Not classified. No ingredient is identified at a concentration that triggers these mixture classifications.
Carcinogenicity	Not classified. The trace nitrate concentration is below the applicable classification level.
Specific target organ toxicity, single or repeated exposure	Not classified at the supplied concentrations.
Aspiration hazard	Not classified; the mixture contains no hydrocarbon or other identified aspiration-hazard ingredient.

Published oral rat LD50 values for individual chemicals include sodium chloride 3,550 mg/kg, potassium chloride 2,600 mg/kg and anhydrous calcium chloride 2,301 mg/kg. The calcium value describes the anhydrous chemical, not a test of the hydrated ingredient or this medium. These ingredient values are not mixture toxicity measurements.

The assessment uses ingredient information and concentration rules, supported by comparable aqueous-medium evidence. No numerical whole-mixture acute-toxicity estimate, chronic-exposure study or interaction study is represented.

IARC identifies ingested nitrate or nitrite under conditions that produce endogenous nitrosation as probably carcinogenic to humans (Group 2A). That exposure-specific finding does not classify this dilute laboratory medium as carcinogenic. No NTP- or OSHA-listed carcinogen is identified at a reportable concentration in the nominal formulation.

12. Ecological information

Not classified as hazardous to the aquatic environment on the available composition information. Bulk discharge can nevertheless increase salinity and nutrient loading, so collect spills and avoid uncontrolled release.

The inorganic ions remain dissolved in water; the organic nutrients may undergo biological transformation. Quantitative finished-mixture biodegradation, bioaccumulation, aquatic toxicity and soil-mobility measurements are not available.

13. Disposal considerations

Collect unused medium and contaminated absorbent according to the laboratory waste procedure and local requirements. Waste classification depends on additions and use, including cultures or hazardous reagents. Keep these waste streams identified. Residual product in bottles must be considered before recycling or disposal.

14. Transport information

Transport item	Supplied liquid
US DOT, IATA and IMDG	Not regulated as dangerous goods
UN number	Not applicable
UN proper shipping name	Not applicable
Transport hazard class	Not applicable
Packing group	Not applicable
Environmental/marine-pollutant designation	No
Bulk transport under IMO instruments	Not intended for bulk maritime transport

Ship in closed, upright bottles with secondary containment and packaging that prevents breakage. Maintain the labeled storage conditions. This determination covers unused medium; additions or contamination can change the transport assessment.

15. Regulatory information

US requirement	Nominal-formulation information
OSHA hazard communication; SARA 311/312	No classified physical or health hazard for the supplied mixture
SARA 302 extremely hazardous substances	No listed substance identified in the nominal ingredients
SARA 313	Trace water-dissociable nitrate falls within the nitrate-compounds category; its concentration is below the 1% mixture de minimis level
CERCLA / Clean Water Act	Ferric nitrate has a listed reportable quantity of 1,000 lb (454 kg), applied to the listed chemical rather than the whole solution
California Proposition 65	No listed chemical identified among the intentionally added nominal ingredients

The nitrate mixture provision does not exempt a facility's handling of the raw ingredient or more concentrated material. Release reporting depends on the amount of the listed substance and the applicable rule; this SDS does not determine a facility's total inventory or reporting duties.

16. Other information

Prepared 20 September 2026. Document revision 2026-09-20.7; formulation revision 2026-09-20.4. This revision completes the nominal-composition hazard and regulatory assessment without changing the formulation.

This SDS applies to the supplied, unused medium. Ingredient substitutions, added reagents, concentration changes or biological use can change its hazards.

Applicability: 500 mL and 1 L bottles; packs of 1, 6, 12 or 24 bottles.